

### REMARKS

Claims 1-24 are pending in the application. In the Office Action of July 2, 2002, the Examiner made the following disposition:

- A.) Objected to claims 22 and 23 for informalities.
- B.) Rejected claims 23 and 24 under 35 U.S.C. §112, second paragraph.
- C.) Rejected claims 11-22 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over *Gies et al.*
- D.) Rejected claims 11-24 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over *Sun*.
- E.) Allowed claims 1-10.

Applicants respectfully travers the rejections and address the Examiner's disposition as follows:

A.) Objection to claims 22 and 23 for informalities:

Claims 22 and 23 have been amended as per the Examiner's request to overcome the objection. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**".

Applicants respectfully submit the objection has been overcome and request that it be withdrawn.

B.) Rejection of claims 23 and 24 under 35 U.S.C. §112, second paragraph:

Claims 23 and 24 have been amended as per the Examiner's request to overcome the rejection.

Applicants respectfully submit the rejection has been overcome and request that it be withdrawn.

C.) Rejection of claims 11-22 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over *Gies et al.*:

Applicants respectfully disagree with the rejection.

Applicants' independent claims 11 and 21 have each been amended to claim an electrolyte composition containing an electrolyte salt, a matrix polymer, and a swelling solvent. The matrix polymer is further defined as being selected from the group consisting of polyvinylidene fluoride, polyhexafluoropropylene, polyethylene oxide, polypropylene oxide, polyphosphazene, polysiloxane, polyvinyl acetate, polyvinyl alcohol, polymethyl methacrylate, polyacrylic acid, polymethacrylic acid, styrene-butadiene rubber, nitrile-butadiene rubber, and polycarbonate. Applicants' independent claim 22 claims a gel electrolyte cell comprising the electrode of Claim 21.

This is clearly unlike *Gies et al.*, which fails to disclose or suggest Applicants' claimed matrix polymer. *Gies et al.* discloses a non-woven polymer selected from the group comprising polyethylene, polypropylene, polytetrafluoroethylene, polystyrene, polyethyleneterephthalate, nylon, and combinations thereof. Unlike Applicants' claims 11, 21, and 22, nowhere does *Gies et al.* disclose or even suggest a matrix polymer selected from the group consisting of polyvinylidene fluoride, polyhexafluoropropylene, polyethylene oxide, polypropylene oxide, polyphosphazene, polysiloxane, polyvinyl acetate, polyvinyl alcohol, polymethyl methacrylate, polyacrylic acid, polymethacrylic acid, styrene-butadiene rubber, nitrile-butadiene rubber, and polycarbonate.

Accordingly, *Gies et al.* fails to disclose or suggest Applicants' independent claims 11, 21, and 22.

Claims 14, 16-20, and 23-24 depend directly or indirectly from claims 11, 21, or 22 and are therefore allowable for at least the same reasons that claims 11, 21, and 22 are allowable.

Applicants respectfully submit the rejection has been overcome and request that it be withdrawn.

D.) Rejection of claims 11-24 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over *Sun*:

Applicants respectfully disagree with the rejection.

Applicants' independent claims 11, 21, and 22 are described above.

*Sun* also fails to disclose or suggest Applicants' claims 11, 21, and 22 because *Sun* also fails to disclose or suggest Applicants' claims matrix polymer. *Sun* discloses a variety of matrix polymers, including polyacrylonitrile, however, nowhere does *Sun* disclose or suggest a matrix polymer selected from the group consisting of polyvinylidene fluoride, polyhexafluoropropylene, polyethylene oxide, polypropylene oxide, polyphosphazene, polysiloxane, polyvinyl acetate, polyvinyl alcohol, polymethyl methacrylate, polyacrylic acid, polymethacrylic acid, styrene-butadiene rubber, nitrile-butadiene rubber, and polycarbonate.

Therefore, *Sun* fails to disclose or suggest Applicants' claims 11, 21, and 22.

Claims 14, 16-20, and 23-24 depend directly or indirectly from claims 11, 21, and 22 and are therefore allowable for at least the same reasons that claims 11, 21, and 22 are allowable.

Applicants respectfully submit the rejection has been overcome and request that it be withdrawn.

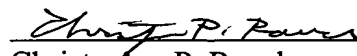
E.) Allowance of claims 1-10:

Applicants respectfully acknowledge the Examiner's allowance of claims 1-10.

#### CONCLUSION

In view of the foregoing, it is submitted that claims 1-11, 14, and 16-24 are patentable. It is therefore submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

 (Reg. No. 45,034)  
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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### In the Claims:

Please amend claims 11, 21, 22, 23, and 24 as follows:

11. (Amended) In the gel electrolyte cell production method using an electrode including a rectangular electrode carrier and a gel electrolyte film formed on the electrode carrier and having a width greater than the electrode carrier, the electrode being produced by:

an overlaying step for overlaying a first carrier having a greater width than the gel electrolyte film, a second carrier having a width approximately identical to that of the gel electrolyte film, and the electrode carrier in this order,

a coating step for applying an electrolyte composition onto the first carrier, the second carrier, and the electrode carrier which have been put upon one another in the overlaying step, in such a manner that the applied electrolyte composition has a width greater than the width of the second carrier and smaller than the width of the first carrier,

a first peel-off step for peeling off from the first carrier the second carrier and the electrode carrier coated with the gel electrolyte composition in the coating step and overlaid on each other,

a gelling step for forming into a gel electrolyte film the electrolyte composition applied onto the second carrier and the electrode carrier which have been peeled off from the first carrier in the first peel-off step, and

a second peel-off step for peeling off from the second carrier the electrode carrier and the gel electrolyte film gelled in the gelling step,

wherein the electrolyte composition in the coating step is in a sol state,

wherein the electrolyte composition contains an electrolyte salt, a matrix polymer, and a swelling solvent, and

wherein the matrix polymer is further defined as being selected from the group consisting of polyvinylidene fluoride, polyhexafluoropropylene, polyethylene oxide, polypropylene oxide, polyphosphazene, polysiloxane, polyvinyl acetate, polyvinyl alcohol, polymethyl methacrylate, polyacrylic acid, polymethacrylic acid, styrene-butadiene rubber, nitrile-butadiene rubber, and polycarbonate.

21. (Amended) An electrode produced by the method of Claim 1, wherein:  
the electrolyte composition in the coating step is in a sol state,  
the electrolyte composition contains an electrolyte salt, a matrix polymer, and a swelling  
solvent, and  
the matrix polymer is further defined as being selected from the group consisting of  
polyvinylidene fluoride, polyhexafluoropropylene, polyethylene oxide, polypropylene oxide,  
polyphosphazene, polysiloxane, polyvinyl acetate, polyvinyl alcohol, polymethyl methacrylate,  
polyacrylic acid, polymethacrylic acid, styrene-butadiene rubber, nitrile-butadiene rubber, and  
polycarbonate.

22. (Amended) A gel electrolyte cell comprising [of] the electrode of Claim 21.

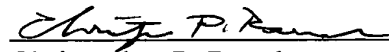
23. (Amended) A gel electrolyte cell of Claim 22, wherein the positive electrode and the negative electrode are cut into predetermined lengths [each other], and attached to each other so that the gel electrolyte film faces to each other, and rolled in [the] a longitudinal direction, and packed in an exterior film made from an insulation material.

24. (Amended) A gel electrolyte cell of Claim 23, wherein a positive electrode lead is welded on the positive electrode and a negative electrode lead is welded on the negative electrode, and these leads protrude through [the] at least one seal [portions] portion of the exterior film.

Please cancel claims 12, 13, and 15.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited as First Class Mail in an envelope addressed to Asst. Commissioner for Patents, Washington, D.C. 20231 on October 1, 2002.

 (Reg. No. 45,034)  
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